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Amendments to the Claims

SENT BY: WILSON & HAM;

Please amend claims 9 and 17 as shown in the following list of claims. This listing of claims will replace all prior versions, and listings, of claims in the application.

- 1. (previously presented) An optical device comprising: 1
- an optics system comprising an input to receive optical signals in 2
- an incoming direction and an output to selectively transmit a selected optical 3
- signal of said optical signals in an outgoing direction, said optics system being
- configured to selectively rotate one of the polarization components of each of said 5
- optical signals in said incoming direction to a first polarization state; 6
- 7 an optical unit optically coupled to said optics system, said optical
- unit being configured to laterally displace and rotate said polarization components 8
- of said selected optical signal such that said polarization components of said 9
- 10 selected optical signal in said outgoing direction are in said first polarization state,
- said optical unit comprising one of a Wollaston prism and a polarizing 11
- beamsplitter, and a wave plate positioned such that said polarization components 12
- 13 of said selected optical signal in said outgoing direction are selectively transmitted
- through said wave plate; and 14
- a diffraction grating positioned between said optics system and said 15
- 16 optical unit to diffract said polarization components of said selected optical signal
- in said incoming and outgoing directions, said polarization components of said 17
- selected optical signal being in said first polarization state in both said incoming 18
- 19 and outgoing directions at said diffraction grating.
- (original) The optical device of claim 1, wherein said diffraction grating 1 2.
- has a grating line frequency greater than 900 grating lines per mm. 2
- 3. (original) The optical device of claim 1, wherein said optical unit ı
- comprises a walk-off crystal and a wave plate positioned such that said 2
- polarization components of said selected optical signal in said outgoing direction 3
- are selectively transmitted through said wave plate. 4

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(canceled). 4.

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- 5. (canceled).
- (original) The optical device of claim 1, further comprising a controllable 1
- switching array, said controllable switching array including pixels with 2
- changeable optical property. 3
- 7. (original) The optical device of claim 6, wherein said pixels include 1
- 2 electrically controllable birefringent material.
- 8. (original) The optical device of claim 7, wherein said electrically ı
- controllable birefringent material is one of liquid crystal and lithium niobate. 2

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- an input optical unit comprising an input to receive optical signals,
- 3 said input optical unit being configured to selectively rotate one of the polarization
- 4 components of each of said optical signals to a first polarization state;
- 5 an output optical unit comprising an output to selectively transmit
- 6 said polarization components of a selected optical signal of said optical signals;
- 7 a diffraction grating optically coupled to said input and output
- 8 optical units to diffract said polarization components of said optical signals to and
- 9 from said input and output optical units, said diffraction grating being a reflective
- 10 type grating;
- an active optical element optically coupled to said diffraction
- 12 grating, said active optical element being configurable to selectively convert said
- 13 polarization components of said selected optical signal from said first polarization
- 14 state to a second polarization state; and
- an intermediate optical unit positioned between said diffracting
- 16 grating and said active optical element, said intermediate optical unit being
- configured to laterally displace and rotate said polarization components of said
- 18 selected optical signal in an outgoing direction from said second polarization state
- 19 to said first polarization state such that said polarization components of said
- 20 selected optical signal are in said first polarization state at said diffraction grating
- 21 in both said incoming and outgoing directions.
- 1 10. (original) The optical device of claim 9, wherein said diffraction grating
- 2 has a grating line frequency greater than 900 grating lines per mm.
- 1 11. (original) The optical device of claim 9, wherein said intermediate optical
- 2 unit comprises a walk-off crystal and a wave plate positioned such that said
- 3 polarization components of said selected optical signal in said outgoing direction
- 4 are selectively transmitted through said wave plate.

- 1 12. (original) The optical device of claim 9, wherein said intermediate optical
- 2 unit comprises a Wollaston prism and a wave plate positioned such that said
- 3 polarization components of said selected optical signal in said outgoing direction
- 4 are selectively transmitted through said wave plate.
- 1 13. (original) The optical device of claim 9, wherein said intermediate optical
- 2 unit comprises a polarizing beamsplitter and a wave plate positioned such that said
- 3 polarization components of said selected optical signal in said outgoing direction
- 4 are selectively transmitted through said wave plate.
- 1 14. (original) The optical device of claim 9, wherein said active optical
- 2 element comprises a controllable switching array, said controllable switching
- 3 array including pixels with changeable optical property.
- 15. (original) The optical device of claim 14, wherein said pixels comprises
- 2 electrically controllable birefringent material.
- 1 16. (original) The optical device of claim 15, wherein said electrically
- 2 controllable birefringent material is one of liquid crystal and lithium niobate.

1	17. (currently affended) A method for thansmitting a selected optical signal,
2	said method comprising:
3	receiving optical signals at an input optical unit of an optical
4	device;
5	selectively rotating polarization components of said optical signals
6	to a first polarization state at said input optical unit;
7	diffracting said polarization components of said optical signals in
8	said first polarization state-using a diffraction grating of said optical device to
9	spatially separate said polarization components;
10	selectively converting said polarization components of a selected
1 1	optical signal of said optical signals from said first polarization state to a second
12	polarization state using an active optical element of said optical device;
13	laterally displacing said polarization components of said the
4	selected optical signal, including transmitting said polarization components of said
15	selected optical signal through one of a Wollaston prism and a polarizing
16	beamsplitter at an intermediate optical unit of said optical device, said
17	intermediate optical unit being positioned between said diffraction grating and
18	said active optical element;
9	rotating said polarization components of said selected optical signal
20	from said second polarization state back to said first polarization state at said
21	intermediate optical unit;
22	diffracting said polarization components of said selected optical
23	signal in said first polarization state using said diffraction grating; and
24	outputting said polarization components of said selected optical
25	signal-at an output optical unit of said-optical device.
1	18. (original) The method of claim 17, wherein said converting includes
2	reflecting said polarization components of said optical signals.
1	19. (original) The method of claim 17, wherein said converting includes
2	converting said polarization components of said selected optical signal from said
3	first polarization state to said second polarization state in response to an electrical
<i>3</i>	control signal.
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1 20. (original) The method of claim 17, wherein said laterally displacing

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